DESIGNING A RESEARCH TRAINING CURRICULUM IN IMPLEMENTATION SCIENCES

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Panel Discussants: Joshua P Metlay, MD, PhD; Ning Tang, MD

KEY ISSUE/CHALLENGE

The NIH Clinical and Translational Sciences Awards (CTSA) provide substantial support for academic medical centers to provide clinical and translational research training in doctoral and masters degree granting programs, and represent a major mechanism for training current and future generations of translational scientists. There are currently no well-established curricula for programs to consider for structuring their training of students, residents and fellows in dissemination and implementation (D&I) sciences within the CTSA programs. There is also a critical need for these programs to provide a bridge to other related disciplines, such as the social and behavioral sciences, health psychology, medical anthropology, economics and health policy.

We presented the results of the strategy we employed at UCSF to develop a research training curriculum in D&I sciences for the CTSA-funded Masters in Clinical Research and PhD in Clinical and Translational Research Programs. We invited session participants to comment on the overall framework of the training program, its suitability for a diversity of trainees, and to propose amendments to each section.

BARRIERS/STRATEGIES TO OVERCOME BARRIERS

In the process of developing a curriculum and training program, we first sought the advice of a large range of UCSF faculty, in the form of both a broad Advisory Board, and a smaller more intensive Steering Committee. We developed a set of definitions, program goals, and a framework for the D&I training program, and identified key barriers and challenges, which we presented to the Think Tank for discussion and problem-solving input.

(a) One of the main challenges identified in developing the research training curriculum in D&I research is that <u>because of the cross-cutting nature of the area, there is no one place for training to focus on or for the training program to prioritize</u>. Consequently, we found that one of the main barriers to developing a curriculum was the lack of existing infrastructure or organization within academic medical centers such as UCSF to create a 'home' for this type of work, which many faculty might be engaged in, even if they did not identify their work as in this area. This challenge was also highlighted at other sessions at the conference that addressed training in the area of D&I sciences.

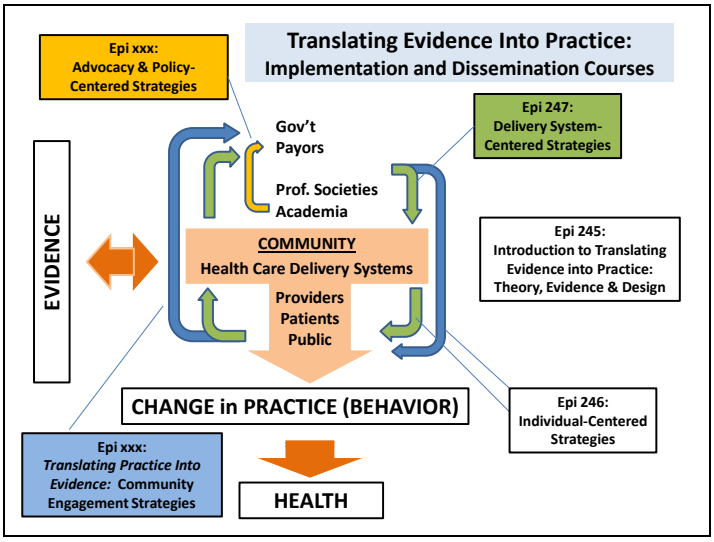
Some of the suggestions for overcoming this potential diffusion across disciplines, were to: (i) create more informal seminars that are widely advertised so that faculty who might have interest and experience could participate and see ways in which D&I research investigations are similar and distinct from other research activities; (ii) create an immersion experience for trainees, analogous to what is experienced in clinical rotations, or in internship work for public health programs. Ideas on how to do this focused on working with NIH and other granting organizations such as AHRQ to track funded D&I research projects, but also included working within local organizations and health care delivery systems to identify such training opportunities. There were several related outcomes from this discussion, including identifying candidate 'case study' training sites that could provide important educational content "on-the-ground" for experiential learning by placing trainees in these projects. As well, such a

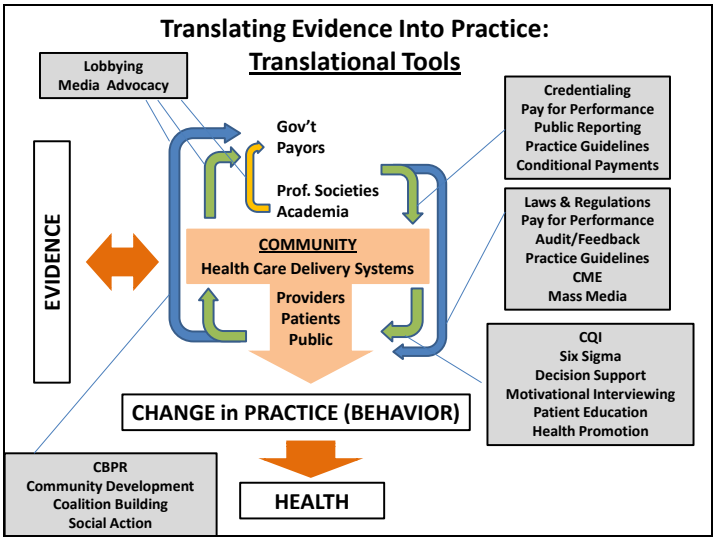
tracking process could also provide training programs across the country with case studies that could be incorporated into their own teaching programs, and this would facilitate training programs in working together. There was also consensus that developing an informal way to follow potential case studies for teaching purposes would be useful for the entire community of D&I researchers, not only those involved in formal teaching programs; and (iii) establish/create "learning collaborative" within the university, across disciplines, for focusing faculty and trainee knowledge within specific areas, such as D&I methods or implementation design and evaluation.

(b) There are many types of trainees who are likely to be interested in D&I methods and projects. Among this audience (medical students, residents, fellows, faculty) it is challenging to create a coherent structured curriculum that can match the various levels of aptitude, experience and interest. Although there is an existing masters level training program in epidemiology and biostatistics at UCSF, which will meet many of the research training requirements for a D&I research masters track, it is nonetheless complex to integrate the new curriculum into the on-going program requirements, and there is not a logical separate framework for organizing a training curriculum.

Although the Think Tank participants acknowledged that it could be challenging to integrate the new curriculum into the existing program, there was consensus that it was preferable to have the foundations of epidemiologic research methods and biostatistics incorporated into the translational sciences curriculum, rather than having a separate program or to set up a curriculum in the absence of an existing masters training program. Some of the specific strategies we will work on with our Advisory and Steering Committees will be to develop further our Framework around which we have organized these courses and to integrate D&I concepts/topics into existing courses (see below). For example, we are currently planning to introduce the concept of D&I research in the first introductory course—"Designing Clinical Research"—that will provide a brief overview of translational research, and to include section leaders with expertise in this D&I research, so that students who may not know much about this area, but are interested in finding out more, can do so within the existing course structures. Additional ideas included having short but intensive courses in related areas, such as health policy and advocacy, or partnering with other institutions to create an array of short intensive courses that could be offered in the summer, and students could take these in different locations, possibly internationally, and that would also allow them to examine other case study settings concurrently.

c) There is lacking a framework for guiding curriculum developing in dissemination and implementation sciences. We developed on centered on the concept of translating evidence into practice and health.


Translating Evidence Into Practice:
Implementation and Dissemination Courses
Epi xxx:
Advocacy & Policy-Centered Strategies
Epi 247:
Delivery System-Centered Strategies
Epi 245:
Introduction to Translating Evidence into Practice:
Theory, Evidence & Design
Epi 246:
Individual-Centered Strategies
Epi xxx:
Translating Practice Into Evidence: Community Engagement Strategies
EVIDENCE
Gov't
Payors
Prof. Societies
Academia
COMMUNITY
Health Care Delivery Systems
Providers
Patients
Public
CHANGE in PRACTICE (BEHAVIOR)
HEALTH


Translating Evidence Into Practice:
Translational Tools
Lobbying
Media Advocacy
Credentialing
Pay for Performance
Public Reporting
Practice Guidelines
Conditional Payments
Laws & Regulations
Pay for Performance
Audit/Feedback
Practice Guidelines
CME
Mass Media
CQI
Six Sigma
Decision Support
Motivational Interviewing
Patient Education
Health Promotion
CBPR
Community Development
Coalition Building
Social Action
EVIDENCE
Gov't
Payors
Prof. Societies
Academia
COMMUNITY
Health Care Delivery Systems
Providers
Patients
Public
CHANGE in PRACTICE (BEHAVIOR)
HEALTH

QUESTIONS FOR FUTURE RESEARCH

We have summarized below the key comments and suggestions for future development and implementation of D&I sciences training programs by our Panel Discussants and the Audience. Exact quotes in italics.

A. Trainee Perspectives

1. Current view is that quality improvement/implementation activities are not "research", and that field experience is more relevant than "research training" for the purpose of leading quality improvement programs.

2. Lack of existing training programs or elements in standard degree-bearing programs. *"Most of them* [PhD, MPA, MBA…] *are very broad-based, none of which were very specific to those who are interested in quality improvement, per se"*

3. "I *wonder if we're missing out on some of the multidisciplinary aspects… if there could be elective courses in certain departments where you can get much more of the organizational behavior, for example, or industrial engineering, or sociology-based research and theories.* Our challenge is reflecting the multiple disciplines that are represented in each course.

4. *"In a way what your training program is allowing clinicians to do is learning some of those consulting skills so that we can go in and… customize* [quality improvement programs] *for the health system or for the delivery provider organization or for the patients that we're really interested in. And those are skills that we're not taught as clinicians."* So the question remains, to what extent do we train clinicians to be the consultants…

B. Program Director Perspectives

1. *"We are constantly going to be challenged with the issue of depth vs. breadth"… There are so many scientific disciplines that converge in these areas. It's hard to know how deep to go and how broad to go.*

2. *"I think team building and team work as an actual explicit curricular element seems very important to me in these kinds of domains. [We need to]empower [trainees] to ultimately realize that they are themselves not sociologists or medical anthropologists or economists or psychologists. [*We need to teach them*] somehow how to actually work with those people.*
    a. *"…the rigorous training that many of these people come out of I think which is very hierarchical, tends to kind of get in the way of a lot of the kind of team building that needs to happen in this kind of work."*

3. *"the challenge between didactic versus experiential training. I think many trainees have a hard time seeing the relevance* [of translational sciences]. [At Univ of Pennsylvania Robert Wood Johnson Foundation Clinical Scholars Program] *we put our students into a community-based project which has been set up for them… where they have to work with community stakeholders with no rules and little bit of guidance… It's a very hard experience, particularly for people who have come from*

places like residency programs—which represent the most prescriptive training you could imagine in your life"

4. *"the challenge of time horizons. I think a challenge here is to get people to engage in this kind of work and have something accomplished within a time horizon that works for them* [in the training program]. *I have this feeling like we need to front load more of that [*qualitative methods; etc*] so that people can hit the ground running. Because if they're not really designing stuff and designing their measurement tools and things in year one, they're not going to have time to cross the finish line* [in year 2]".

5. *"the evidence of scholarship coming out of these programs. We've got some distance to cover here and I think as we are training people in these things we have to work on what the receptor sites here are to maintain the scholarship while at the same time teaching that the work matters."*

6. *"…you have a fairly health care centered model here. On the other hand, it's undoubtedly correct that a lot of the really key implementation work is going to be outside the health care context."*

7. *"Think about how to structure and may even widen up the audience of people who train in these things".*

C. Participant Perspectives

1. *"One of the audiences we target is clinical research coordinators because there's really not a whole lot of formal masters level training for them. So that's one thing…"*

2. *"Problem-based learning that also incorporates the experiential piece of things in a way that you can make this very unique and very appropriate."*

3. *"…for the larger dissemination and implementation struggle to be won we are going to need to have changes in the professional culture to really accept this."*

4. *"Did you sit down and actually map it out against evidence-based public health practice in those competencies?*

5. *"Just to add to the confusion, the CTSAs are currently coming up with all kinds of competencies for various translational science subjects and the community engagement people have a whole bunch."*